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SYSTEMS ACQUISITION MANAGER TRAINING: AN INTEGRATIVE APPROACH.(U)  
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## PROGRAM MANAGEMENT COURSE INDIVIDUAL STUDY PROGRAM

SYSTEMS ACQUISITION  
MANAGER TRAINING:

AN INTEGRATIVE APPROACH

STUDY PROJECT REPORT  
PMC 76-2

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DEFENSE SYSTEMS MANAGEMENT COLLEGE

**STUDY TITLE:**

**SYSTEMS ACQUISITION MANAGER TRAINING: AN INTEGRATIVE APPROACH**

**STUDY PROJECT GOALS:**

To outline an acceptable study program which will meet the need for training personnel newly assigned to the systems acquisition career field. The study program must provide the maximum training for a minimum time away from the job.

**STUDY REPORT ABSTRACT:**

The study report details the need for effective training in the basics of systems acquisition for all involved in the systems acquisition process, especially those destined to become program managers. A course of instruction integrating a self-study program, on-the-job training, and a short classroom consolidation session is suggested. A syllabus of instruction outlining the units of instruction is presented.

**Subject Descriptions: Program Management: Training**

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**SYSTEMS ACQUISITION MANAGER TRAINING  
AN INTEGRATIVE APPROACH**

**Study Project Report  
Individual Study Program**

**Defense Systems Management College  
Program Management Course  
Class 76-2**

by

**Edward H. Roberts, Jr.  
Lt Col USAF**

**November 1976**

**Study Project Advisor  
Lt Col Carroll C. Rands**

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**This study project report represents the views, conclusions and recommendations of the author and does not necessarily reflect the official opinion of the Defense Systems Management College or the Department of Defense.**



## EXECUTIVE SUMMARY

The purpose of this Individual Study Program was to investigate the needs for the training of systems acquisition personnel, in particular those destined to become program managers and to recommend an appropriate training course.

The Air Force Systems Command Inspector General inspection of late 1974 into the management of Non PAR/CAR programs revealed severe deficiencies in the management of these programs. One finding indicated that adequate training prior to assignment to a program manager position could help alleviate these problems.

In an effort to provide the necessary training to appropriate individuals several difficulties were encountered. First was the reluctance of the supervisors to release the individuals from the job for the time to attend school. Then there was the problem of school quotas. The quotas available were not sufficient to train all those requiring the training.

This study offers a possible solution. A training program integrating the elements of self-study, on-the-job training and classroom instruction is recommended. A syllabus of instructions outlining the basic elements of study for program managers is a part of the report.

The on-the-job training and classroom elements are conventional but require interface with the other components of the training program. The self-study portion of the

program is intended to be more than a conventional correspondence course. A programmed course utilizing cassette tapes and supplemental visual aid devices is recommended.

The detailed development of the training course is beyond the scope of the report. The task of detailed course development to include preparation of course materials could be given to a task force comprised of members of the United States Air Force Reserve. Groups of Reservists have been used in other similar efforts. The skills necessary for the development of the training course are available among the Reservists assigned to Air Force Systems Command. The effort to produce the course as well as maintaining and updating the course is an ideal Reserve activity.



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"Behold: I send you out as sheep  
in the midst of wolves; so be wise as  
serpents and innocent as doves..."

Jesus of Nazareth

(As recorded in Matthew 10:16, RSV)

## SECTION I

### INTRODUCTION

The forewarning and advice given by Jesus to his trainees\*, quoted on the preceding page, might well be imparted to our systems acquisitions' managers. Sadly, a major difference in the ability to heed the warning and perform in the manner recommended can readily be identified and attributed to the training program through which the two groups of students went. The disciples were carefully taught and prepared for their mission; their training program lasted three years. All too often, the acquisition manager is sent on his way with a minimum of preparation and a lot of hope for a miracle.

The need for training in the systems acquisition process for those involved in the acquisition business has been well documented. The Air Force Systems Command (AFSC) Inspector General Report on Non PAR/CAR Programs detailed the deficiencies in the management of small programs and specified the need for more adequately trained personnel, especially in the Program Management jobs. The report stated, "...managers who had attended a formal Systems Program Office (SPO) management course such as the Defense Systems Management School (DSMS) were significantly better in overall performance than those who had not had this training." (2:4)

\*Disciple may be translated from the Greek as trainee, or learner.



The obvious simple solution of sending everyone to school before assignment to systems acquisition duties is not feasible. When the IG Report was published, a survey revealed a backlog of 766 untrained personnel either performing duties or in positions which required some degree of management training in the systems acquisition process (3). Approximately 200-300 new people who could profit from this type of training are assigned annually to duties in the systems acquisition career area. Unfortunately, the two main schools offering appropriate training to Air Force personnel have a maximum training capacity of 200-250 students per year. Even if the quotas were increased, experience in obtaining attendees at the schools leads to the conclusion that we could not adequately fill them if the current nominating procedures are continued (4). In this era of reduce manpower, Commanders and System Program Directors are reluctant to part with valuable manpower resources for 6½ weeks [Air Force Institute of Technology (AFIT) SPO Course] or 20 weeks [Defense Systems Management College (DSMC)].

This study suggests a possible solution to the problem of training large numbers of systems acquisition personnel. Sections II and III explore the need for training, the subject areas that should be presented, and outline the schooling currently available. The need to prepare the acquisition manager for his job is reaffirmed. Section IV presents one possible answer to satisfying this training need with an integrated approach. This approach combines a self-study



program with on-the-job training and finally a short (one or two week) workshop to tie the various elements of the training program together. The study program will contain the elements needed to familiarize the acquisition manager with the many facets of his job. A suggested syllabus of instruction results from this study.

## SECTION II

### PRESENT SITUATION

#### Summary of the Problem:

A significant percentage of the Air Force annual budget is spent in research and development and systems acquisition. In Fiscal 1977 this figure is \$14,294 million. The magnitude of this expenditure would certainly dictate that the stewards of the money be very proficient in obtaining the most for every dollar spent. They should be able to employ the ultimate in management skills. The Air Force openly subscribes to these precepts. Unfortunately, in practice, the training necessary to equip the custodians of this trust with the basic knowledge required cannot be made available to all needing it. The training programs available simply do not have adequate capacity to meet the total training requirement; therefore, many are relying on on-the-job (OJT) training in an attempt to learn the necessary skills involved in program management.

The major programs, such as F-15, F-16, and the B-1, draw attention and the headlines. These programs have directors experienced and trained in the systems acquisition process. However, for each of these major programs, and indeed even within the major program office, there are dozens of small dollar programs each requiring a manager utilizing the same basic management skills as those directing the major procurements. These small programs provide the spawning



ground for those who will manage the major programs of the future, and to relegate the junior manager to learning the skills of the trade strictly from OJT is to start him out with two strikes against him.

The IG Report quoted in the Introduction indicated that too many times this "major program manager of the future" was thrown into his small program without adequate preparation or supervision; given a difficult task that had been made all the more difficult because we did not feel we could spare the individual from the job for the time required to attend school or we didn't have the school quota available to give this manager some preparation for the important task of acquiring Air Force weapons systems.

The IG Inspector found that in those programs with problems, "Project manager performance was therefore determined to be the weak link in the chain." (2:4) The report goes on to note that those managers given formal training in acquisition management performed significantly better than those with no training.

Inadequate training of our program managers is also cited by J. Ronald Fox in his book, Arming America. He says, "The military officers who are assigned to program management positions are poorly trained to negotiate with industrial contractors and usually fail to have the requisite training and experience in procurement and general business management." (5:455-6)



Certainly all of the problems in systems acquisition cannot be traced to this problem of inadequate training; but, it is an area in which improvements can be made. To not make the possible improvements to our training program and thus attempt to better equip the program manager for his job would be as great a failure to perform assigned duties as the failure of the program manager to maintain control of his program.

Courses Currently Available:

The currently available schools approach the training of acquisition managers in a slightly different fashion since each was designed to address a different training need. The System Program Officer Course (SYS 223) taught by AFIT is basically an introductory course into acquisition management. It is designed for the lieutenant/captain level and for those just entering the systems acquisition career area. The course is six weeks in duration. The present course outline is in Appendix A.

The Defense Systems Management College (DSMC) Program Management Course (PMC) is 20 weeks long. Air Force students are predominantly majors and lieutenant colonels who have some experience in the systems acquisition career area. Specifically Air Force Regulation (AFR) 36-23 states that the selectees for the school will be in the grades of O-4 selectee, O-4, or O-5. Additionally, they must possess a fully qualified Air Force Specialty Code in a particular career field directly related to some facet of systems

acquisition (9: 2-7, 2-8).

AFIT and DSMC both conduct short courses in specialized areas of acquisition management such as financial management, procurement, etc. A sample listing of some of these is found in Appendix B. However, even with the supplemental short courses providing instruction in the specialized areas, the number of people needing the generalized training in basic systems acquisition management exceeds the available spaces. With an annual input of 300 officers into the career area plus a current backlog of 300-400 individuals needing this training, some new means must be established to adequately train large numbers of people for their acquisition duties. Air Force Manual (AFM) 36-1 clearly expresses the fact that completion of an appropriate systems acquisition management course is required and mandatory for upgrading to the fully qualified level in the specialty area (8: A10-33-34; A11-3).

An attempt at clearing the backlog of those requiring the training was made in early 1976. AFIT and AFSC jointly developed a "short course" in SPO management. The course was officially named the Systems Program Manager Workshop and attempted in 13 days to provide the essentials of the SYS 223 course. However, in spite of the name "workshop," the method of instruction was entirely lecture and discussion and crammed a very large amount of material into a short period of time. The course was taught at AFSC Product Divisions and slightly over 400 individuals received the training. An AFIT traveling team administered the course using local experts in



various fields as guest lecturers. The course helped to meet an immediate need but was neither designed nor envisioned to be the optimum solution. An outline of this course is found at Appendix C.

Filling school quotas is a primary problem in the training of program managers. However, this problem is not just relegated to the program manager training. It exists for all types of training that are not mandatory by regulation. Although AFM 36-1 states that attendance at this type of course is mandatory for upgrading with the specialty, waivers have been granted generously. Many supervisors, even though admitting that training is beneficial to their officers, have been writing requests for delay in entering training and even outright release from school attendance for all areas of program management training as well as professional military education (PME). AFSC, to fill their quotas of 25 for each of the last two classes of the PMC at DSMC, has used the entire list of qualified nominees consisting of over 150 names (4). The requests for release from PME attendance, if the trend continues, could approach the same magnitude. Many systems program personnel are meeting the PME completion requirements by correspondence rather than attend the schools. For many it is the preferred way to obtain the training and fulfill the requirements. The reasons -- whether mission-oriented or personal -- for this reluctance to attend in-residence training are beyond the scope of this study.



However, one reason seems to be the time required away from the job; it is this reason being addressed in this paper.

The salient point when planning for the training of systems acquisition personnel is clear. Training for program managers must be designed to provide adequate training with a minimum time away from the job environment. As stated earlier, the main shortfall of our present training effort is the inability to train the large number of officers who require the training. This shortfall, coupled with the recognized need to expose an officer to the basic concepts of program management early in his career development pattern, are the two strategic factors addressed by the integrated training program recommended by this study.

### SECTION III

#### DESIRED CHARACTERISTICS OF A PROGRAM MANAGER TRAINING COURSE

"Formal program management training should be a prerequisite for assignment as a project manager." (2:27) This statement is found in the recommendations resulting from the AFSC IG Report of late 1974. The recommendations spell out alternatives but the clear message is that all personnel selected to be acquisition managers, "as well as their supervisors," (2:27) should be given some formal training. The requirement for training is most critical in the overview of the acquisition process; however, the need for specialized detailed courses in functional areas, such as procurement, also exists. A total program should provide for the specialized needs as well as the generalized training need.

The demands of the environment upon those entrusted with managing our defense acquisitions continue to increase. For example, with tighter budgets, a closer accounting is required and "doing more with less" becomes a way of life rather than just a catchy phrase. Therefore, the demands of this environment and the concomitant interaction of the program manager with it, must be thoroughly taken into consideration when designing both the training material and the method of presentation.

This demanding environment is detailed in the previously quoted book, Arming America by Fox. His study explores the



many aspects of defense procurement and analyzes the mistakes and pressures. He also outlines the program office and succinctly summarizes the duties of a program manager. In short Fox states that the program manager must oversee the Defense Department's efforts to acquire, deploy, operate, and support major weapons systems of proven capability with approved schedules and budgets (5:173). The outline of these duties is expanded in the book, but the summary also provides an outline for the training necessary before assigning one to the job.

The design of a training course for program managers is complicated by the nature of the subject and by changing policies. The changing of policies results from the experience gained in applying management theories. Policies tend to evolve as experience is gained. Life cycle cost is one example of a recent concept that is still evolving. In this case, there are directives and policy letters available, but the practical application and reliability of the technique is still being determined. This changing nature of the "business" dictates flexibility in the training program. Another area demanding this flexibility is the broad area of "management" itself. There is no unanimity in schools of thought as to how management should be taught, what theories should be taught or what applications can be taught. The teaching of the basic ideas and concepts is generally accepted. But flexibility is still the key word.

And flexibility in a training program which teaches the management of systems development is what one would expect. Flexibility is required to insure that the training program maintains its relevancy. The nature of the systems acquisition business is such that room for creativity and flexibility is required. So why should this not also be the case with the training program? An inflexible set of rules and procedures will stifle ingenuity and tend to destroy the very traits desired in the management of a development program.

The concern for improving the acquisition process is not a new one. Our continuing reorganization, changing procedures and directives reflect this concern. The PROJECT ACE (Acquisition Cost Evaluation) studies directed by Major General Kucheman in the Spring of 1973 was one effort at analyzing our problems and making improvements. In the area germane to this study, Finding 48 dealt with the personnel aspects of the program manager career field. The now famous Finding 48 Report stated the advantages of specialized education for acquisition management and recommended a correspondence course for those who could not attend a course in residence (7:50).

A correspondence course in the purest form may not be the total solution but a well designed program of self-study augmented by other training can provide the answer to meeting the large volume training requirement.



Motivation has always been a problem in self-study programs. This is especially true where the course is assigned rather than entered into voluntarily. Motivation could be a problem in the self-study training program being recommended by this paper. We must ensure that the individual clearly perceives that it is to his advantage to successfully complete the course of study. One way to assist in this perception is to point out the direct relationship between the completion of this course and a career in the systems acquisition area. The systems acquisition career area is generally recognized as a desirable career area to pursue. Field grade promotion opportunities in the past strengthened this perception.

Many panels and individuals who have studied and commented on the program manager career area have emphasized the need to recognize and reward those showing ability and competence in management. Several Secretaries and Assistant Secretaries of Defense have voiced the same thought...select good people and reward them appropriately for doing a good job. These rewards should be designed to appeal to the type of people desired to become systems program managers and thus well appreciated throughout the Air Force. Promotion opportunities must continue to be good as or better than any other career area in the Air Force. Personal satisfaction and self-actualization must be insured and as can be summarized from the many policy statements;...give the manager the job, the tools with which to do the job and let him do the job. From this can come a

feeling of accomplishment that is not always present in the management structure that requires the program manager to continually justify his every decision to every level of command. Finally, the individual must perceive that the rewards will continue to be available.



## SECTION IV

### AN INTEGRATIVE APPROACH TO TRAINING SYSTEMS ACQUISITION PERSONNEL

A brief outline of the training courses presently available for Systems Acquisition personnel was presented in Section II of this report. The structure of the Program Manager Courses and the discussion of the program manager duties in Section III provides some insight into the complexities involved in the management of systems acquisition. Discussion with those in command positions and those in the upper level of DOD indicate their realization of these complexities and their realization of the practical limits of the program manager's capabilities.

Nonetheless, at the program manager's level, his job approaches that of being all things to all people in matters relating to his program. This required diversity dictates a broad-based knowledge of all aspects of the systems acquisition business. And, as has been thoroughly discussed in the AFSC IG Report of 1974, no one should be placed in the position of program manager without thorough preparation. The arguments for proper training are numerous and conclusive. The decisions that remain deal with the "what," "when," and "how" type questions. This section will offer some suggestions toward answering these questions as they pertain to the training of Program Managers. Table 1 is an outline of the areas of instruction. The suggested method of presentation

is a combination of a self-study program, on-the-job training, and classroom instruction. The blending of these elements into an integrated program is discussed in the material that follows. A proposed syllabus for the training course is presented in Appendix D.



TABLE 1

<u>Units of Instruction</u>	<u>Instruction Method</u>
Systems Acquisition Management Overview	Self-study
Management Principles	Self-study
Financial Management and Program Control	Self-study On-the-job Training
Procurement	Self-study On-the-job Training
Production	Self-study On-the-job Training
Systems Engineering and Logistics	Self-study On-the-job Training
Interface Agencies	Self-study
Classroom Training Session	Lecture - Discussions Practical Exercise

**PURPOSE: TO PREPARE THE INDIVIDUAL FOR SYSTEMS ACQUISITION DUTIES**

The integrated training program suggested in this paper was developed using the systems approach. The following definition of a "system" was used as a guide: "A deliberately designed synthetic organism, comprised of interrelated and interacting components which are employed to function in an integrated fashion to attain predetermined purposes." (6.2) Using this definition, we can specify the systems components to be the self-study program, on-the-job training and classroom instruction.

From the purpose -- i.e. the preparation of the individual for his task -- the process to achieve the purpose may be developed. And then, finally, one may move to the content of the process needed to achieve the basic purpose (6:6). But for now our attention is turned to process.

**PROCESS:**

As stated earlier, when designing the process, the environment of the program manager must be taken into consideration. One may envision this environment as a larger system within which and with which his smaller system interacts. It is definite that the program manager lives within an open system; and this realization must be prominent in our design of the training program. This environment, of which we speak, consists of the manager's day-to-day working conditions, policies, and procedures of the parent agency, basic defense requirements and the interactions between



various government agencies, including the Congress.

It is true that this environment places limitations on the process; but rather than letting these have a negative influence on the process, they can be used to some advantage. The biggest restriction, as discussed earlier, is that of getting all of those who need the training to the school. This restriction is based on both manpower and economic considerations. The Air Force simply cannot afford to create the necessary spaces in the existing schools nor can it spare the large number of people away from the job for the time required to attend school. These factors lead to the development of a self-study program for much of the required training. If the training is provided while the individual is assigned in the acquisition management environment (not as a program manager but in a support position), the training will be reinforced by the day-to-day observations by the student.

To be of maximum value to both the individual and the Air Force, the training should be given at the outset of the individual's assignment to the systems acquisition community and before he is given duties requiring detailed knowledge of the acquisition process. The suggested program should be structured primarily for captains and junior majors. Proper scheduling of officers in training will require more attention to the assignment process and to internal organizational reassignments. For example, some positions could be

identified as trainee positions. These should be in the larger program officers which would afford the variety of training experiences in various facets of program management. For instance, using trainees in the Program Control Office of a major Systems Program Office, would offer the opportunity to participate in cost tracking and scheduling activities. This on-the-job reinforcement will be extremely valuable. It is not intended that the trainee be considered as a non-contributing part of the office of assignment. Quite the contrary, the hope is that he will become a full contributor much faster than if he had to rely solely on OJT as many of our officers are now doing. After completion of the training period he could be moved to more responsible positions, or even into a small acquisition program as the program manager.

The basic component of this integrative approach to systems acquisition training is a well designed self-study program. (Suggested course content follows later in this report). The program should be designed to be self-pacing; however, one would be expected to complete the program six to nine months after assignment to the systems acquisition career area. The self-study program will be supported by another component of the system: that of on-the-job training. Several illustrations were given earlier in this part. Integrating appropriate training with the job will take some study and some expenditures of resources to get started;



however, the long-term benefits should easily justify the initial effort. The final component is a short consolidation, review and practical exercise in a school environment. This school environment could be provided at a single site, such as the current AFIT facilities, or brought to the student in the same manner as the recent workshop.

This approach to training of acquisition personnel can be quite flexible and provide economical training of large numbers of individuals each year. The training can be easily tailored to meet several different situations. One criticism of the current Systems Program Officers Course at AFIT is that it is too closely oriented to the aircraft business and does not adequately meet the needs of those in the space, missiles, and electronic development activities. The self-study course could contain the macro-view of acquisition management for all to study and then branch into specifics for the area most appropriate for each individual student.

The self-study program is not intended to be just another correspondence course. The study program should use appropriate aids to learning which will demand the utmost involvement of the student. Certain types of information may be best presented in programmed text form. Other information may be best presented through the use of audio cassettes accompanied by a notebook containing charts and diagrams.

Video tape is not recommended. The expense of the equipment and the requirement that the student go to a learning center detract from the desirability of this medium. Rather than video tape, consideration should be given to the small desk top viewers that couple a film cassette with an audio cassette. This viewer is designed so that the film cassette can be used to show both moving and still pictures synchronized with the audio tape. These machines are easily transported and do not require critical adjustments. The student could borrow one of these machines from the learning center and use it for home study. Machines of this type are listed in the GSA Catalog and are available in some base education offices.

Some type of audio cassette with visual presentation is recommended as the primary means of presenting the material in the course. A study guide outlining the objectives for each block of instruction and listing appropriate reference material should accompany each lesson. Each major division involved in systems acquisition could equip a learning center with background materials, regulations, directives, and a number of appropriate learning aid machines.

#### CONTENT:

The simple answer to the question, "What should be taught?" is "Teach the Program Manager all he needs to know in order to properly manage his program." Then comes the difficult part: defining just what the Program Manager does



need to know. The research and development community has been studying and continues to study the desirable attributes, skills, and required education for program managers. As the primary author of the PROJECT ACE, Finding 48 Report put it, "The number of studies on program manager training and utilization closely approximates the number of program managers."

(11:1) The report containing this statement goes on to reaffirm the conclusions of the many other studies and lists the areas of expertise most desirable in a systems acquisition manager. These areas of expertise must permit him to carry out his assigned responsibilities. As Fox states, "His assigned responsibilities are those of a top level business executive: planning, organizing, directing, and coordinating all program activity and evaluation performance." (5:173) These, of course, pertain to the program manager for a major development program. However, they do apply, in some degree, to any officer assigned to systems acquisition duties. (For the variations of degree, see AFM 36-1, entry requirements versus fully qualified requirements) to fulfill the objectives which Fox states are the objectives of a program manager (see earlier part of this report), the program manager must:

- "1. Establish firm and realistic system and equipment specifications
2. Define organizational relationships and responsibilities
3. Identify high risk areas

4. Explore schedule, cost, and technical performance trade off decisions
  5. Select the best technical approaches
  6. Establish firm and realistic schedules and cost estimates
  7. Formulate realistic logistics support and operational concepts
  8. Lay the groundwork for contracting for the program."
- (5:173)

The above responsibilities and the attributes requisite to their accomplishment, form the basis for the suggested content of the training course. Primarily, the individual must be able to apply basic management skills. The acquisition manager must then be familiar with the development and acquisition environment and be able to adapt his management style to the environment. The program manager must have a knowledge of the systems engineering process, logistics, and all the "ilities"\* involved. And then the program manager must understand the principles of financial management, government procurement, and the production process. Added to these are test and evaluation, deployment, and the critically important area of personnel management. The program manager has available functional specialists to help in each of these areas, but he still must be equipped with the basics of what

\*Ilities - A collective term used to incorporate specialty areas such as reliability, maintainability, survivability, etc.



is involved in order to coordinate the efforts of these functional specialists. Since the initial effort in this suggested training program is to be aimed at the individual just starting out in the acquisition business, then the content of the course and level of instruction should be designed to meet the requirements of this individual. This specifically tailored course has the inherent flexibility in schedule and subject matter to be adapted to individual needs.

The point has been made that the course must present a broad overview of the areas of knowledge needed in the systems acquisition field. Table 1 introduced the content of the suggested course. The restrictions of time and space did not permit a thorough dissertation on each subject area listed in Table 1; however, the summary of duties presented by Fox and those duties and responsibilities listed in the Air Force Specialty Codes for both the Acquisition Program Management Utilization Field, 27XX, and the Program Management Career Area, 29XX, (See Appendix E) can be related to the subjects presented in Table 1. The course outline is expanded in the syllabus contained in Appendix D. The syllabus gives suggested objectives and suggested method of presentation. Detail of subject matter to be presented and estimates of time requirements for each unit of instruction are not presented. These items are beyond the scope of this report and can be best determined during actual course construction. Some comment about the subject area of general management principles is

appropriate. This area has been the subject of much discussion in considering the curriculum for the AFIT SYS 223 course. Time available dictates limits on what is taught and consideration has been given to the fact that many of the attendees of the SYS 223 course have had basic management training in college or in professional military education. As a result much of the basic management principles unit of instruction was removed from the SYS 223 course. After some discussion with those concerned with improving our management procedures and reviewing a survey (10) of DSMS graduates which yielded significant comment favoring the teaching of basic management principles there was no doubt that basic management principles should be a part of the curriculum suggested for the Program Management Training Course.

The point was made earlier that the individual could reinforce the learning process by actual observation of the acquisition process in operation. This is an important part of this integrative approach to management training. It is envisioned that the supervisors would provide the pragmatic lessons to support the academic material as well as allowing some time during normal duty time to work on the course material.

The trainee should be scheduled to attend quarterly financial reviews and participate in the preparation for the review. Provisions could be made for him to be the recorder in negotiation sessions. The trainee should be given the



opportunity to do the detail work on wide variety of the normal administrative documents that flow through the program office. This will require continuing flexibility in the assignment process; however, the value of gaining broad experience in a short period of time easily justifies the little extra personnel work. Care must be exercised by the supervisors not to move the individual too fast. This could have a counterproductive effect in that he would not have time to absorb anything and just become more confused as he moved to another job.

After completion of the self-study program and corresponding on-the-job experience, the trainee would be scheduled to a workshop or classroom consolidation session. This session would be one or two weeks in duration and be designed to tie together the various units of instructions. The students could cross-feed experiences and ideas. Practical exercises in the form of several case studies or one long systems acquisition case study could be presented during the class sessions. Since these sessions will be of short duration a sufficient number could be scheduled so that all requiring the training could be scheduled to attend. If the requirements at one location were sufficient then the school could be brought to the students rather than the students brought to the school.

#### COURSE DEVELOPMENT:

The detailed design of the course outlined in this paper

and actually putting together the many elements involved will be an extensive undertaking. Air Force Systems Command, in conjunction with AFIT, maintains a curriculum committee with the charter to develop and keep current the SYS 223 curriculum. This committee could be used as advisors to a group tasked to put together and implement a new training course for program managers.

Several approaches in forming such a task force to put together a new course present themselves. One approach would be to contract the effort to an appropriate firm. An acceptable firm should be located with little effort. Another approach is to assemble together, from available resources within the active force, the expertise needed to develop the course. This expertise would include the functional areas detailed in the course syllabus and people skilled in educational techniques, especially programmed instruction. It would be desirable to relieve this group from other duties while they were in the process of developing the course.

A third approach, also using available resources, is worthy of serious consideration. Assigned to Air Force Systems Command are a large number of Reserve personnel. A review of the skills possessed by this group revealed expertise in all the areas needed for course development. Several are actively involved in educational systems in their civilian jobs. Many are employed as engineers, engineering managers, finance officers, and lawyers. There are also those who are Civil



Service employees working in some of the areas of concern such as personnel management. The AFSC assigned Reservists have been taking on similar tasks and have become a quite useful part of the research and development team. The Special Assistant for Reserve Affairs for Air Force Systems Command indicated that undertaking the development of the Acquisition Manager Training Course was a feasible task for the Reserve group. A task force could probably be assembled and chartered 60 to 90 days after detailing the requirements and providing a basic course outline. Using this "in-house" capability may well be the most economical approach to the developing of the course. Reserves are available at all AFSC subcommands so current inputs from each activity could be included with a minimum requirement for travel.

After the course is developed and the materials assembled, the Reserve group could also be given the task of installing the course in the field. After the implementation, the continuing task of keeping the materials current and making improvements as required is an ideal Reserve activity.

## SECTION V

### SUMMARY

The mistakes made in past systems acquisition efforts are documented and serve as a lesson for those currently involved and those who will be involved in the future in developing our nation's weapons systems. Citing these errors and the faults of others does not justify current failings. Every effort must be made to minimize these failings and where there are development problems, to minimize the impact. On March 9, 1971, then Deputy Secretary of Defense David Packard Testified before the House Armed Services Committee. "A very crucial problem area in the past has been that project officers were not doing an adequate job. This resulted from many factors, including assignment of managers who were poorly selected or who lacked proper training for the job...give project managers the special training in development and procurement they need in order to do their job properly..." (5:200). This recognition by Secretary Packard of the training shortfall was the first step along the long road of project manager development. Today, everything must be done to reduce the number of mistakes in systems acquisition management; the first step in this effort is to do everything possible to install qualified personnel in the systems acquisition tasks. Appropriate training must be available for all involved in the development process.



This paper recommends a basic course of instruction for those in their initial assignment in the systems acquisition career area. In order to make the training available to as many people as possible a program which integrates on-the-job training, self-study, and finally a classroom review and practical exercise session is suggested.

This concept of training can be adapted to all involved in systems acquisition. The basic concept of a self-instruction program was specifically applied toward a broad based course in this paper; however, the concept can be readily expanded to cover the detail required in each of the functional areas of the acquisition business. So for those assigned to the financial management area, for example, a detailed follow on course could be easily developed for financial management, and so on for each of the additional functional areas.

Any basic course of instruction must provide the information necessary to prepare the individual for his/her job. In the case of systems acquisition management, the approach suggested in this paper can be developed into a course of instruction fulfilling this purpose. Then the course must be recognized as such by the Air Force. This course should satisfy the training requirement for upgrade of skill level as outlined in AFM 36-1.

Then finally in order to provide continuing motivation, appropriate recognition and rewards must be within reach of

those choosing systems acquisition as a career field. Given the appropriate recognition and reward, the motivation for the good people to improve their abilities through a rigorous program of self-study will be there. It should be said of these individuals as was said of those who helped Nehemiah rebuild the walls around Jerusalem: "...for the people had a mind to work..." (1b). This same "mind to work" will be continually required in performing the duties required in the management of systems acquisition. If the requirement for training is documented, the training well-designed and made available to the individual, and appropriate rewards given, then those without "the mind to work" clearly do not belong. The choice should not be whether to embark on the self-study program, but whether to enter into the field of systems acquisition.



## APPENDIX A

### SYSTEMS PROGRAM MANAGEMENT COURSE (SYS 223)

#### COURSE OUTLINE

<u>DAY</u>	<u>SUBJECT</u>
1	Registration, Welcome and Opening Address Creativity
2	System Acquisition Management Overview AFSC Organization and Role in System Acquisition AFLC Organization and Role in System Acquisition
3	Dr. Jerry Harvey (Video Tape Part 1) Principles of Project Management Development Plans
4	Dr. Jerry Harvey (Video Tape Part 2) Problem Solving
5	Prototyping SPO Manpower and Organization Planning, Programming and Budgeting System Leonard Sullivan (Video Tape)
6	Student Presentations Communications Scientific and Technical Intelligence
7	Student Presentations Civilian Personnel General Steward (Video Tape) Air Force Laboratories
8	Student Presentations Introduction to Procurement Types of Contracts
9	Student Presentations Procurement Planning Work Breakdown Structure (WBS) Request for Proposal (RFP) and Procurement Evaluation Panel

<u>DAY</u>	<u>SUBJECT</u>
10	Student Presentations Statement of Work (SOW) Source Selection Principles and Techniques of Negotiation
11	Student Presentations Contract Law Procurement Seminar Program Manager
12	Student Presentations Air Force Plant Representation Office (AFPRO) Defense Contract Administration Service (DCAS) Subcontract Management Program Manager
13	Student Presentations Configuration Management Data Management
14	Student Presentations Field Trip
15	Production/Manufacturing Management Quality Assurance System Engineering
16	Standardization Program Reliability and Maintainability Nonnuclear and Nuclear Survivability
17	Human Factors System Safety Integrated Logistics Support (ILS) Deputy PM for Logistics
18	Midterm Exam Midterm Critique Software Management Program Manager
19	Engine Management Test and Evaluation



<u>DAY</u>	<u>SUBJECT</u>
20	Funds Management in the Product Division Program Control
21	Design to Cost/Life Cycle Cost Independent Cost Analysis Economic Escalation
22	Cost/Schedule Control System Criteria (C/SCSC) Program Management in Industry Program Management Responsibility Transfer (PMRT)
23	Cost Performance Report Analysis Management Review Process Program Manager
24	Schedule Techniques Environmental Assessment Defense Management Simulation (DMS) Orientation, Decision Point 1 and Decision Point 2 Preparation
25	Overhead Management DMS, Decision Point 3 Briefing and Preparation
26	DMS, Decision Point 3 Preparation
27	DMS, Decision Point 3 Negotiations DMS, DSARC II
28	Projects Organization Aerospace Environment Support DMS, Decision Point 4 Brief and Preparation
29	Support Equipment Military Facilities Planning Air Training Command
30	DMS, Decision Point 5 and DSARC Preparation DMS, DSARC III

DAY

SUBJECT

31

Security Assistance Program  
System Officer (SYSTO)  
DMS, Decision Point 6 Brief and  
Preparation

32

Final Exam  
Final Exam Critique  
DMS, Prepare for Critique

33

DMS, Critique  
End of Course Critique  
Graduation



## APPENDIX B

### SAMPLE LISTING OF PROGRAM MANAGMENT ORIENTED COURSES

#### MANAGEMENT

<u>TITLE</u>	<u>LOCATION</u>	<u>LENGTH</u>
Program Management	Defense Systems Management College (DSMC), Fort Belvoir, VA	20 Weeks
Systems Program Management	AF Institute of Technology (AFIT), Wright-Patterson AFB, Ohio	6.6 Weeks
System Program Director Procurement Refresher	AFIT	5 Days
Executive Refresher Course in Program Management	DSMC	3 Weeks
Industry Financial Management Course	DSMC	2 Weeks

#### PROGRAM CONTROL

Contractor Performance Measurement Course (C/CSSC)	DSMC	5 Days
Basic Quantitative Methods in Cost Analysis	AFIT	18 Days
Advanced Quantitative Methods in Cost Analysis	AFIT	18 Days
Advanced Cost and Economic Analysis	AFIT	20 Days

<u>TITLE</u>	<u>LOCATION</u>	<u>LENGTH</u>
Evaluation of Performance Measurement Systems	AFIT	15 Days
Production Management	AFIT	34 Days
Production Management II	AFIT	13 Days
Cost Analysis/ Systems Program Financial Mgt.	AFIT (EWI)	10 Months

#### ENGINEERING

Reliability/Main-tainability Engineering	AFIT (EWI)	10 Months
Value Engineering	AFIT	5 Days

#### PROCUREMENT

Advanced Contract Administration	AFIT	10 Days
Contract Administration	AFIT	15 Days
Contract Law	AFIT	9 Days
Defense Cost/ Price Analysis	AFIT	10 Days
Defense Contract Pricing Techniques	AFIT	20 Days
Defense Advance Procurement Pricing	AFIT	17 Days



**TITLE****LOCATION****LENGTH**

Cost  
Reimbursement  
and Incentive  
Contracting

AFIT

8 Days

Industrial  
Procurement  
and Production

AFIT (EWI)

10 Months

**LOGISTICS**

Logistics  
Management

AFIT (EWI)

10 Months

**APPENDIX C**  
**SYSTEM PROGRAM MANAGEMENT WORKSHOP**

<b><u>DAY</u></b>	<b><u>SUBJECT</u></b>
1	Opening Day Address Acquisition Management Overview SPO Manpower and Organization Development Planning
2	Problem Solving
3	Introduction to Procurement Advance Procurement Plan Types of Contracts
4	Contract Law Request for Proposal/Procurement Evaluation Panel
5	Statement of Work Source Selection Principles and Techniques of Negotiation
6	Contract Administration Subcontract Management Program Manager (Program Management)
7	Independent Cost Analysis Work Breakdown Structure Program Control Funds Management at the Product Division
8	Life Cycle Cost Design to Cost Cost/Schedule Control System Criteria
9	Overhead Management Projects Division Configuration Management
10	Data Management System Engineering Standardizations Management Review Process



DAY

SUBJECT

11

Quality Assurance  
Reliability and Maintainability  
Environmental Assessment  
System Safety  
Nonnuclear Survivability  
Nuclear Survivability

12

Production Management  
Integrated Logistics Support

13

Test and Evaluation  
Foreign Military Business  
Program Management Responsibility  
Transfer

**APPENDIX D**  
**SYLLABUS OF INSTRUCTION**



## APPENDIX D

### SYLLABUS

This appendix presents a suggested syllabus with objectives and primary methods of instruction. The units of instruction are arranged primarily along the functional lines that exist within the acquisition business, and some areas of overlap exist in the course just as they exist in the acquisition management business. This interrelationship between units of instruction serves the overall purpose of the course also, because one of the primary functions of a manager is to be an integrator. The workshop session designed to conclude the formal training course is intended to help in tying together the instructional units presented.

## SYSTEMS ACQUISITION MANAGEMENT OVERVIEW

### Objectives:

- a. Understand the systems concept and its application to program management.
- b. Know the systems acquisition life cycle.
- c. Know the process through which an operational need is evolved into an approved program.
- d. Understand the planning, programming, and budgeting process from the program management office through the Congressional budget approvals.
- e. Understand the process through which funds are made available to a program, to include authorization, appropriation, apportionment, and allocation.
- f. Understand the organizational and management interfaces relevant to acquisition management.
- g. Understand the DOD decision making process.
- h. Know the DOD policies and directives relevant to acquisition management.
- i. Know the mission, organizational structure, basic operating procedures of the AFSC and AFLC and their relationships.

### Method of Instruction:

Self-study program to include audio and visual aids. The study guide will contain a self-evaluation examination. The study program can be supplemented by providing the trainee the



opportunity to participate in document preparation appropriate to the phase of the program to which he is assigned.

### MANAGEMENT PRINCIPLES

#### Objectives:

- a. Be familiar with the evolution of management theory.
- b. Understand the principles of project management to include various management structures.
- c. Study examples of different system project office organizations.
- d. Be familiar with the complex interactions that occur as a result of people working together in an organization.
  - (1) Know methods to resolve problems that arise associated with the human dimensions of the organization.
  - (2) Be familiar with behavioral concepts and principles that are relevant to managerial effectiveness.
- e. Be familiar with the civilian personnel structure and management policies.

#### Method of Instruction:

Self-study program using audio cassettes to present the lecture material. The audio should be supplemented by notebooks containing necessary written material. The supplemental material should also include lists of references for further study in specific areas of interest. The study guide should include a self-evaluation examination.

## FINANCIAL MANAGEMENT AND PROGRAM CONTROL

### Objectives:

a. Know the programming, budgeting, and financial procedures. Specifically know the program budget cycle to include:

- (1) Terminology
- (2) Annual budget development from program office through PPBS to Congress.
- (3) Appropriation, apportionment, and allotment.
- (4) Initiation, commitment, obligation, and expenditure procedures.
- (5) Funds tracking procedures.

b. Be familiar with cost control procedures, contractor operations, and data available to the program office.

c. Be familiar with the basic cost estimating techniques, understand the importance of this function and how it is accomplished by and for the program office.

d. Be familiar with the application of the work breakdown structure in cost estimating, tracking, and analysis.

e. Be familiar with the financial aspects of design to cost and life cycle costs.

f. Understand the purpose of the program control function and its involvement with the other aspects of the program.

(1) Be familiar with the management techniques involved in program control and the methodology involved in assembling and presenting program data.



(2) Be familiar with the financial review process and be able to assemble financial data for such a review.

Method of Instruction:

Self-study program to include step by step how to do it lessons with sample reports and charts accompanied by instructions on audio tape. This unit of instruction should be supplemented by assignment to a program control office for a time period long enough to allow the trainee to participate in a quarterly financial review. Other financial tracking and reporting functions should also be performed by the individual.

PROCUREMENT

Objectives:

a. Know the procurement process during the system life cycle to include:

- (1) The statutory and regulatory framework.
- (2) DOD procurement authority organization.
- (3) Types of contracts and the characteristics of each type.
- (4) Requests for proposals, statements of work, bids, and proposals.
- (5) Negotiation
- (6) Source selection:
  - (a) Authority
  - (b) Members
  - (c) Procedures and policies

(7) Advanced procurement plan

(8) Plant Cognizance Program

(a) DCAS

(b) AFCMD

b. Understand the project office interface with the division procurement office.

c. Be familiar with the contractual aspects of Foreign Military Sales.

Method of Instruction:

Self-study utilizing both audio and visual aids. The Armed Service Procurement Regulations should be made available to the trainee and the lesson material should reference specific paragraphs appropriate to the lesson. The self-study could be supplemented by allowing the trainee's participation in several procurement activities. At the very least, the documents pertaining to the program to which the individual is assigned should be provided for review. The study guide should contain a self-evaluation examination to point out specific areas of this large unit of instruction that the student needs to review.

PRODUCTION

Objectives:

a. Be familiar with the concepts of the management of the production phase of systems acquisition.



b. Be familiar with the production planning process and its phasing in the system life cycle.

c. Be familiar with the program office relationships with various support agencies to include functional specialists, plant representatives, and contract administrators.

Method of Instruction:

Self-study program to include audio and visual aids. This unit can be effectively supplemented by sending the trainee to contractor facility where he can observe a production line in operation. The study guide should contain a self-evaluation examination.

SYSTEMS ENGINEERING AND LOGISTICS

Objectives:

a. Be familiar with the systems engineering process, the integrated logistics support system, the relationship between these two disciplines and the influence these disciplines have on design to cost and life cycle cost considerations.

b. Be familiar with:

(1) The concepts of the work breakdown structure.

(2) Use of specifications and standards and the

Defense Standardization Program.

(3) System safety.

(4) Configuration management.

(5) Reliability and maintainability program.

(6) Human factors requirements.

(7) Objectives of the survivability/vulnerability program.

c. Be familiar with integrated logistics support, its basic concepts, and impact on the program office in all stages of the system life cycle. The ILS study will include:

- (1) Supportability
- (2) Data management
- (3) Transportability considerations
- (4) Air Logistics Division

d. Be familiar with the test and evaluation program, the principles of development test and evaluation and operational test and evaluation, and the role of the various test agencies.

Method of Instruction:

Self-study program using audio cassette presentation. The audio should be supplemented by a notebook containing the necessary charts, diagrams, and references to regulations and policy statements. The on-the-job supportive training should include the opportunity to work in one specific area appropriate to the individual. The study guide should contain a self-evaluation examination.

INTERFACE AGENCIES

**Objective:**

Be familiar with the role of the various interface agencies and the relationship with the program office:

- (1) Air Force Systems Command Laboratories



- (2) Test Facilities
- (3) Foreign Technology Division
- (4) Plant Representatives (Air Force, Navy, Army)
- (5) Air Training Command
- (6) User Liaison Offices
- (7) Manpower Engineering Teams
- (8) Other Air Force Systems Command Divisions
- (9) Base Support Facilities
- (10) Navy Material Command and Army Material and

Readiness Command.

Method of Instruction:

Self-study program using lecture material on audio tape, accompanied by a study guide and notebook containing charts and other visual learning aids. The student should meet with representatives of these organizations and discuss their duties and relationship to the program office.

CLASSROOM TRAINING SESSION

Objectives:

- a. Understand the integration of the variety of program office activities into one cohesive unit.
- b. Understand the management strategies involved in this integration.
- c. Be able to work sample case studies involving acquisition management problems.

d. Be able to successfully complete a comprehensive examination covering the material presented in the training course.

Method of Instruction:

Classroom lecture to include crossfeed of experiences of the students while in the training program. An example exercise taking a program through its life cycle should be worked by the students as a group project.



**APPENDIX E**

## APPENDIX E

AFM 36-1(C19) Attachment 10 1 September 1976 Effective 31 October 1976

A10-31/32

### INTRODUCTION

#### \* ACQUISITION PROGRAM MANAGEMENT UTILIZATION FIELD (27)

1. The Acquisition Program Management Utilization Field encompasses staff and management functions peculiar to the Air Force acquisition life cycle. Air Force Regulation 800-2, "Program Management", and its attachments provide basic and detailed guidance for acquisition programs. Executive supervision in acquisition program management is described by AFSC 2996, Program Manager.

2. Specific instructions on the utilization of the AFSCs follow:

a. It is desirable that entry into the career field be preceded by assignment in another utilization field whenever possible. This desired career broadening is to provide a better perspective and understanding of the interfaces between functions of acquisition management and related functions in the developing, operating, training, and support commands. Lateral inputs will include only those officers who have clearly demonstrated a potential for effective administration and program management beyond their basic specialty.

b. AFSC 2716, Acquisition Management Officer, identifies those positions which have responsibilities for systems, major subsystems or equipment, or in the overall aspects of the program management effort.

c. AFSC 2724, Acquisition Project Officer, identifies those positions which have the responsibilities for assisting in the planning and management of the system, subsystem, or equipment acquisition programs.

d. The terms "program" and "program management" are concerned with the acquisition effort managed by the Air Force. In addition, the term "logistics" relates to the Integrated Logistics Support (ILS) function performed by the Air Force Logistics Command.



**OFFICER AIR FORCE SPECIALTY****\*ACQUISITION MANAGEMENT OFFICER****1. SPECIALTY SUMMARY**

Plans and manages acquisition programs of other than major systems or subsystems throughout the Acquisition Life Cycle; performs managerial functions involving engineering; program control, test and deployment, configuration management; or acquisition program integrated logistics support (ILS); performs staff functions essential to acquisition programs; performs acquisition support roles.

**2. DUTIES AND RESPONSIBILITIES**

a. *Provides overall program management.* Performs as the Program Manager (PM) for the acquisition of any program not meeting the definition of a major program (see AFR 800-2). Includes direction and participation in efforts to establish the technical, military, and economic bases for a program in the conceptual phase and all other managerial efforts needed throughout the validation, full-scale engineering development, and production/deployment phases of the acquisition life cycle. Interfaces with defense contractors.

b. *Performs program office management.* Assists the PM by performing various managerial and primarily supervisory tasks associated with such functions as program control, configuration management, test and deployment, engineering, and ILS. Specific duties may include; assessment of overall performance of the program office (PO) and preparation of status briefings for PM use; preparation of key program documentation, such as the program management plan (PMP); integrated logistics support plan (ILSP), etc; organization, administration, and chairmanship of the Configuration Control Board; preparation and execution of system and subsystem management. Serves as project officer or manager having cost, schedule, logistics, and engineering responsibilities for a discrete portion of a system, either

hardware or software, systems integration responsibility for identifying and resolving all subsystem and hardware/software interface or logistics problems in support of an optimum system design; or as the deputy program manager for logistics (DPML) per AFR 800-8 or assistant to the DPML; performs ILS engineering and planning tasks.

c. *Provides staff function.* Serves as a staff focal point for assembly, analysis, and dissemination of information relevant to assigned acquisition programs or broad aspects of program management. Assures timely issuance or coordinated headquarters direction, primarily in the form of program management directives (PMD). Supports program advocacy efforts and assures thorough and timely review of proposals and documentation presented for Air Force and Department of Defense approval. Assists in program budget preparation and budget defense.

d. *Provides acquisition program support.* Performs acquisition program support role. Acts as liaison or focal point for using command's interest in appropriate programs. Plans for and manages training logistics support of acquisition programs by assisting in translating program requirements and specifications into training or logistics support requirements.

**3. SPECIALTY QUALIFICATIONS**

a. *Knowledge.* Knowledge of Air Force program management procedures pertinent to development, procurement, production, and logistics support; performance characteristics, capabilities, and limitations of Air Force systems and equipment is mandatory.

b. *Education:*

(1) Bachelor's degree in management, engineering, business administration, or science is mandatory.

(2) Master's degree in management or administration appropriate to systems management is desirable.

(3) Completion of senior Air Force or Joint Service School is desirable.

(4) Completion of Air Force Institute of Technology's Education with Industry program is desirable.

c. *Experience.* Full qualification in a specialty in the Research and Development Career Area, or Procurement Management, or Financial Utilization Field is mandatory. In addition, a minimum of 18 months' managing or directly supporting management of an acquisition program is mandatory. It is mandatory that experience include staff level responsibilities of system/subsystem/equipment acquisition management.

d. *Training:*

(1) Completion of AFIT System Program Management course or a DOD Defense System

Management School is mandatory.

(2) Completion of a resident course at the Defense Systems Management School is desirable.

#### 4. SPECIALTY DATA

a. *Grade Spread.* Major through colonel.

Director, Research and  
Development . . . . .

189.118

b. *Related D.O.T. Jobs:*

c. *Related DOD Occupational Group:* 4N



**OFFICER AIR FORCE SPECIALTY****\* ACQUISITION PROJECT OFFICER****1. SPECIALTY SUMMARY**

Assists in planning and managing system, subsystem or equipment acquisition programs throughout the Acquisition Life Cycle; performs functions involving engineering, personnel subsystem, data management, configuration management, program control, test and deployment or acquisition program integrated logistics support (ILS).

**2. DUTIES AND RESPONSIBILITIES**

a. *Plans and manages acquisition programs.* Plans and manages acquisition of system, subsystem, equipment, or follow-on development or modification programs. Translates operational requirements and system design into definitive subsystem and equipment acquisition programs and recommends specific implementing actions. Evaluates program progress and initiates actions required to insure availability of operable and supportable subsystems and equipment. Manages collective actions of participating organizations in planning and executing system, subsystem, equipment, and updating change and modification programs. Establishes and chairs technical interchange and direction meetings with contractors, Program Office (PO) personnel, and other support agencies to assure coordinated project efforts. Manages system engineering analysis and/or logistics support analysis to assure proposals and changes sound in terms of operational, development, procurement, production, logistic support, and maintenance requirements and objectives. Implements procedures for collection, correlation, and dissemination of information relating to acquisition programs. Advises management activities of actual or potential breaches of program thresholds for cost, schedule, or performance. Serves on boards, committees, and working groups to assure smooth transition through the phases of the Acquisition Life Cycle. Plans for and monitors initial training of operational, logistic support, and maintenance personnel in conjunction with contractors, training agencies, logistic and maintenance support agencies, and testing and using activities.

b. *Manages personnel subsystems function.* Develops concepts, prepares plans and programs, and manages personnel subsystem development programs and activities for system development. Included are the areas of personnel planning information, both quantitative and qualitative, human engineering, biomedical support requirements, training, training equipment and facilities, technical publications for training, and job aids, as well as personnel subsystems test and evaluation.

c. *Performs data management.* Plans, manages, and verifies contractor validated data necessary for the Air Force to develop, acquire, install, test, operate,

maintain, overhaul, modify, supply, support, and reproduce systems, subsystems, and equipment.

d. *Assists in configuration management.* Examines contractor and Government Plant Representatives (GPR) procedures to assure adequacy of engineering release systems, part numbering, serialization, change processing, effectivity of changes, and centralized management of proposal preparation including reviewing, planning, costing, and scheduling. Establishes control and safeguards with contractor and GPR for control of design changes. Plans and conducts design reviews and configuration audits with engineering personnel. Establishes and maintains official records of all Physical Configuration Audits (PCA), Functional Configuration Audits (ECA), product configuration base line, and the uniform specification file. Establishes procedures for preparing, submitting, and distributing proposals for changes. Insures rapid technical review and decision on contractor or Air Force requests for technical design changes. Administers operation of Configuration Control Board (CCB). Reviews contractor's proposals for completeness; prepares and issues CCB directives; and takes followup action to accomplish timely contractual coverage.

e. *Assists in Program Control.* Performs functions required to assess the performance or progress of the PO and to assist in documenting status and future plans in formal documentation such as the Program Management Plan. Develops responses to inquiries and direction from the Program Manager (PM) and from higher headquarters. Designs briefings and proposals for the use of the PM and participates in or manages various ad hoc projects and studies involving every aspect of PM responsibility.

f. *Performs test and deployment operations.* Assists in the translation of operational requirements, system and subsystem design into test plans and programs. Works closely with engineering, logistics and contractor personnel in defining detailed test specifications that delineate all normal and peculiar test support requirements, data acquisition facilities, etc., and achieves pretest coordination of such plans, programs, and specifications. Supports deployment by functioning

as a technical interface between the operational site and attendant Site Alternation Task Force (SATAF) and the PO. Identifies deployment problems of a technical or scheduling nature and expedites their coordinated solution. Includes performance of SATAF duties when so assigned.

g. *Provides Acquisition Program Integrated Logistics Support (ILS).* Assists in program documentation such as specifications, Request for Proposal (REP), Program Management Plan (PMP), Integrated Logistics Support Plan (ILSP), and test and evaluation plans and programs as concerns logistics supportability and cost of

ownership. Performs logistics engineering and ILS planning and specific tasks within the broad elements of Maintainability and Reliability Interface, Maintenance Planning, Support and Test Equipment, Supply Support, Transportation and Handling, Technical Data, Facilities, Personnel and Training, Logistic Support Resource Funds, Logistic Support Management Information. Performs logistics support analyses (LSA) and trade-offs. Applies logistics support cost (LSC) and life cycle cost (LCC) modeling techniques. Performs duties of Deputy Program Manager for Logistics (DPML) per AFR 800-8 or Assistant to DPML, when so assigned.

### 3. SPECIALTY QUALIFICATIONS

a. *Knowledge.* Knowledge of Air Force system/subsystem/equipment acquisition program management philosophy, policies, and procedures applicable throughout the several phases of the Acquisition Life Cycle is mandatory.

b. *Education:*

(1) Bachelor's degree in engineering, science, industrial management, management or management-oriented engineering is mandatory.

(2) Master's degree in management or administration appropriate to program management is desirable.

(3) Completion of an AFIT Education with Industry program is desirable.

c. *Experience.* A minimum of 18 months' experience in program management duties of the type described herein is mandatory. It is mandatory that experience includes administration of system/subsystem/equipment program management.

d. *Training:*

(1) Completion of AFIT System Program Management course or a DOD Defense Systems Management School is mandatory.

(2) Completion of a resident course at the DOD Defense Systems Management School is desirable.

### 4. SPECIALTY DATA

a. *Grade Spread.* Second lieutenant through major.

b. *Related D.O.T. Job.*

Director, Research and Development . . . 189.118

c. *Related DOD Occupational Group:* 4N



PROGRAM MANAGEMENT CAREER AREA

UTILIZATION FIELD 29

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**INTRODUCTION****\* PROGRAM MANAGEMENT UTILIZATION FIELD (29)**

The Program Management Utilization Field encompasses only major acquisition program managers. These managers are responsible for conducting all facets of system acquisition from the conceptual phase through transitioning the newly developed system into the operational world. Also the program managers will present briefings on the total program or selected portions of the program up to the Secretary of Defense level. These briefings may include development/production schedules, financial status, requirements versus technological capabilities, etc. Because of the high risk, high level visibility and responsibility involved, only fully qualified management officers who have served in key positions in an acquisition program office are considered eligible for this specialty. In addition, experience in the command designated to utilize the new equipment is highly desirable.



## OFFICER AIR FORCE SPECIALTY

## \*PROGRAM MANAGER

## (SYSTEM PROGRAM DIRECTOR)

## 1. SPECIALTY SUMMARY

Directs and provides executive management supervision for major system acquisition programs, as delineated by AFR 800-2, "Program Management", and attachments throughout all phases of the acquisition life cycle.

## 2. DUTIES AND RESPONSIBILITIES

a. *Formulates system objectives and policies.* Translates operational requirements into definitive system programs, evaluates contractor proposals, and recommends specific implementing actions. Establishes detailed plans for system acquisition, evaluates program progress, and initiates actions such as are required to insure availability of operable and supportable systems, subsystems and equipment on establishing schedules. Formulates policies and procedures governing conduct and administration of development, procurement, and production activities to assure optimum attainment of program objectives. Makes changes to system program as required.

b. *Organizes and directs Program Office.* Develops organization and manning of Program Office (PO). Initiates plans, policies, and programs for management of engineering and specialized personnel to insure optimum use of skills and abilities. Interprets and then directs execution of policy, procedures, regulations, and directives established by higher headquarters. Manages and directs collective actions of participating organizations. Assures proposals and changes presented for Air Force and Department of Defense approval are sound in terms of operational, development, procurement, production, and support requirements and objectives. Insures PO functions as Air Force focal point for dealing with contractors supporting program and acts

as the official source of program information. Maintains a continuous assessment of program progress and performance versus requirements, threat, schedule and costs, and informs higher headquarters of recommended changes as well as potential or actual breaches of program thresholds. Insures effective accomplishment of budgeting, funding, and accounting functions associated with program. Actively manages program costs by forcing identification of realistic life-cycle costs, developing "design-to" cost parameters, and by weighing all program decisions in light of the program cost threshold. Serves, or appoints representatives to serve, on boards, committees, and working groups concerned with program.

c. *Coordinates system program with using and supporting commands.* Establishes and supervises working groups and panels as required to assure smooth transition of systems, subsystems and equipment into operational inventory of using commands. In conjunction with system contractor, training agencies, and testing and using activities, plans for and monitors training of operational and maintenance personnel. In conjunction with the Deputy Program Manager for Logistics (DPML), Integrated Logistics Support Manager, contractors, support agencies, and using activities, plans for and monitors system logistics support.

## 3. SPECIALTY QUALIFICATIONS

a. *Knowledge:*

(1) Knowledge of Air Force program management procedures pertinent to development, procurement, production, and logistics support to include a working knowledge of AFR 800-2 and its attachments is mandatory.

(2) Knowledge of performance characteristics, capabilities, and limitations of Air Force systems and equipment is mandatory.

b. *Education:*

(1) Bachelor's degree in management,

engineering, business administration, or science is mandatory.

(2) Master's degree in management or administration appropriate to program management is desirable.

(3) Completion of senior Air Force or Joint Service School is desirable.

(4) Completion of Air Force Institute of Technology's Education with Industry program is desirable.

c. *Experience.* Full qualification in a specialty in the

Research and Development career area is mandatory. In addition, a minimum of 18 months' as Program Manager, Deputy Program Manager, or in a comparable position, managing, or directly supporting management of a major acquisition program during acquisition life cycle is mandatory. It is mandatory that this experience include: ~~directing and controlling activities of a Program Office;~~ establishing system requirements, objectives, and

implementing instructions; evaluating proposals; monitoring program progress; controlling programmed system funds; managing system development, procurement, and production; and integrating activities of program contractors, support agencies, and testing and using organizations.

~~d. Training.~~ Completion of a resident course at the Defense Systems Management School is mandatory.

#### 4. SPECIALTY DATA

a. *Grade Spread.* Lieutenant colonel and colonel.

Director, Research and

Development . . . . . 189.118

b. *Related D.O.T. Jobs:*

c. *Related DOD Occupational Group:* 5L



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